NOISE IMPACT ANALYSIS

Nextel Communications
Site Number: CA-8414J
Site Name: Engineer Springs
1654 Arnoldo Road
Dulzura, California 91917

County of San Diego Major Use Permit
MUP 05-022

Prepared For

Nextel Communications, Inc.
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Property Owner

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Prepared By

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Job # A60527N1

June 21, 2006

TABLE OF CONTENTS

FIGURES

APPENDICES

1.0 EXECUTIVE SUMMARY

The proposed Nextel wireless telecommunications facility, known as Engineer Springs, consists of the construction of an unmanned telecommunications facility consisting of a 10.5-foot high by 11.5-foot wide by 20-foot long prefabricated equipment shelter which will enclose equipment cabinets for wireless telecommunications equipment. Also planned are 12 directional panel antennas which will be mounted on a proposed 35-foot high faux monopalm. New electric and telco runs to the area of the equipment shelter are also planned. The project site is located at 1654 Arnoldo Road, in Dulzura, County of San Diego, California.

The purpose of this report is to assess noise impacts from on-site noise sources, and to determine if mitigation is necessary and feasible to reduce project related property line noise impacts to below 45 dBA, in compliance with the County of San Diego most restrictive nighttime property line noise limit.

Based on the project information available, calculations show that without mitigation, the unmanned operation of this facility will be in compliance with the County of San Diego nighttime property line noise limits. Calculations show that the wireless equipment noise impacts from the proposed Nextel facility will be as high as 38.0 dBA L_{EQ} at the eastern property line, at the worst-case location.

2.0 INTRODUCTION

This acoustical analysis report is submitted to satisfy the County of San Diego requirement for a major use permit. Its purpose is to assess noise impacts from on-site project related noise sources, and to determine if mitigation is necessary and feasible to reduce property line noise impacts to below 45 dBA, in compliance with the County of San Diego nighttime property line noise limit.

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting, abbreviated "dBA," to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol "L_{EQ}" unless a different time period is specified, "L_{EQ}" is implied to mean a period of one hour. Some of the data may also be presented as octave-band-filtered and/or A-octave-band-filtered data, which are a series of sound spectra centered about each stated frequency, with half of the bandwidth above and half of the bandwidth below each stated frequency. This data is typically used for machinery noise analysis and barrier-effectiveness calculations.

The Community Noise Equivalent Level (CNEL) is a 24-hour average, where sound levels during evening hours of 7 p.m. to 10 p.m. have an added 5 dB weighting, and sound levels during nighttime hours of 10 p.m. to 7 a.m. have an added 10 dB weighting. This is similar to the Day-Night Sound Level (L_{DN}), which is a 24-hour average with 10 dB added weighting on the same nighttime hours but no added weighting on the evening hours. Sound levels expressed in CNEL are always based on A-weighted decibels. These data unit metrics are used to express noise levels for both measurement and municipal noise ordinances and regulations, for land use guidelines, and enforcement of noise ordinances. Further explanation can be provided upon request.

Noise emission data is often supplied per the industry standard format of Sound Power, which is the total acoustic power radiated from a given sound source as related to a reference power level. Sound Power differs from Sound Pressure, which is the fluctuations in air pressure caused by the presence of sound waves, and is generally the format that describes noise levels as heard by the receiver.

Sound Pressure is the actual noise experienced by a human or registered by a sound level instrument. When Sound Pressure is used to describe a noise source it must specify the distance from the noise source to provide complete information. Sound Power is a specialized analytical method to provide information without the distance requirement, and can be used to calculate the sound pressure at any desired distance.

2.1 Project Location

The subject property is located at 1654 Arnoldo Road, in Dulzura, County of San Diego. The Assessor's Parcel Number (APN) is 649-141-06-00. The property is rectangular in shape with an overall site area of approximately 16.2 acres. The zoning designation for the subject parcel is A-72 for limited agricultural use. Planned land uses for the surrounding parcels are residential.

The subject property is currently occupied by a single family home. There are no existing wireless facilities on the subject site. The proposed lease area site is in the central southern vicinity of the subject property, approximately 190 feet from the eastern property line and 510 feet from the existing home. The lease area is approximately 650 square feet in area.

For a graphic representation of the site, please refer to the Thomas Guide Map, Assessor's Parcel Map, Satellite Aerial Photograph, Topographic Map, and Land Use Map provided as Figures 1 through 5, respectively.

2.2 Project Description

The proposed project consists of the construction of an unmanned telecommunications facility consisting of a 10.5-foot high by 11.5-foot wide by 20-foot long prefabricated equipment shelter which will enclose equipment cabinets for wireless telecommunications equipment. Also planned are 12 directional panel antennas which will be mounted on a proposed 35-foot high faux monopalm. New electric and telco runs to the area of the equipment shelter are also planned.

For additional project details, please refer to the project plans provided in Appendix A.

2.3 Applicable Noise Standards

The noise regulations applicable to this project are contained within the San Diego County Code, Section 8.32.040, entitled Sound Level Limits. Based on these noise regulations, and the County of San Diego scoping letter, dated March 29, 2006, the following property line noise limits apply for this project: 50 dBA from 7 a.m. to 10 p.m. and 45 dBA from 10 p.m. to 7 a.m. Planning for this project will be based on the more restrictive nighttime limit of 45 dBA.

Please refer to copies of the pertinent related sections from the County of San Diego scoping letter which is provided as Appendix B and pertinent sections of the San Diego County Code provided as Appendix C.

3.0 ENVIRONMENTAL SETTING

3.1 Existing Noise Environment

3.1.1 Existing Noise Sources

The existing noise environment is primarily a result of distant traffic noise from Highway 94.

3.1.2 Ambient Noise Monitoring

An on-site inspection was conducted at 1:00 p.m. on Wednesday, May 3, 2006. The weather conditions were as follows: a breeze from the west, low humidity, and temperatures in the high 70's. A 5-minute ambient noise measurement of 41.1 dBA L_{EQ} was taken at a location adjacent to the proposed lease area. The microphone position was approximately five feet above the existing grade.

3.2 Future Noise Environment

The future noise environment in the vicinity of the project site will be primarily a result of the same noise sources, as well as the proposed Nextel wireless facility.

3.2.1 Project Related Noise Sources

The proposed Nextel wireless equipment facility consists of one type of significant noise source, which are exterior-mounted air conditioning units.

This project proposes the use of two Marvair ComPac II HVAC units. While two HVAC units are planned to be installed on the exterior of the equipment shelter, only one is expected to be operational at a time, never running simultaneously. The proposed Nextel facility is planned to be operational 24 hours a day, 7 days a week.

To determine the expected equipment exterior noise levels for this analysis, it was necessary to measure the noise level of a single operational unit. The manufacturer's data show the noise emission level for this unit as 73 dBA at 5 feet. A noise level measurement of a single existing Marvair ComPac II HVAC unit was made at an operational Verizon installation at Casa de las Campanas, 18655 West Bernardo Drive, in the City of San Diego, California, at 7:30 a.m. on November 24, 2003. The measured noise level was 74.9 dBA L_{EQ} at 5 feet. The measurement may have a small traffic noise contribution, as it is slightly higher than the manufacturer's data; therefore, the measured noise level will be used for worst-case analysis and noise planning purposes. The octave-band noise data for the HVAC unit noise measurement used in the new Nextel planning analysis is provided in Table 1.

Table 1. Measured Noise Level of a Single Operational Marvair ComPac II HVAC Unit

Octave Band Center Frequency (Hz)	63	125	250	500	1K	2K	4K	8K	L_{EQ}
Noise Level at 5 feet (dB)	79.9	77.5	75.5	70.5	70.6	66.8	59.6	55.2	74.9 dBA

The Nextel wireless facility also incorporates fully enclosed equipment cabinets housed within a pre-fabricated shelter. Noise impacts from these equipment cabinets are not considered significant, and therefore are not included in the noise impact analysis.

4.0 METHODOLOGY AND EQUIPMENT

4.1 Methodology

4.1.1 Cadna Noise Modeling Software

Modeling of the outdoor noise environment is accomplished using Cadna Ver. 3.5, which is a model-based computer program developed by DataKustik for predicting noise impacts in a wide variety of conditions. Cadna (Computer Aided Noise Abatement) assists in the calculation, presentation, assessment, and mitigation of noise exposure. It allows for the input of project information such as noise source data, barriers, structures, and topography to create a detailed CAD model and uses the most up-to-date calculation standards to predict outdoor noise impacts.

4.1.2 Summary of Site Specific Features Included in Cadna Model

Existing and proposed features at the project site that were included in the Cadna noise prediction model are listed in Table 2. These are considered to be the only on-site permanent features that will contribute to the noise environment or affect the noise propagation of the existing and proposed noise sources to the adjacent property lines.

Table 2. Summary of Site Features Included in Cadna Model

Description	Height
Topographic Contours	1390 to 1700 feet in elevation (AMSL)
Existing Residential Buildings	15 feet above grade
Proposed Nextel Equipment Shelter	10.5 feet above grade
Proposed HVAC Units	4 feet above grade

4.1.3 Calculated Noise Levels for Model Comparison

In order to validate the results of the Cadna noise prediction model, the noise impacts from the proposed Nextel HVAC equipment were manually calculated as simple attenuation by distance. This was done for each of the property line receiver locations. These values were compared to those predicted by Cadna. The Cadna model includes additional attenuation due to intervening structures, topography, and ground absorption, which the differences in modeled and calculated noise levels are attributed to. This data is summarized in Table 3.

Table 3. Calculated Noise Levels for Model Comparison						
Noise Source	Receiver	Location	Distance from Source (ft.)	Calculated Noise Level[1] (dBA)	Cadna Model Noise Level[2] (dBA)	Difference (dB)
Marvair ComPac II 74.9 dBA Measured @ 5 ft.	R1	Northern Property Line	990	29.0	14.0	15.0
	R2	Southern Property Line	392	37.0	21.5	15.5
	R3	Eastern Property Line	197	43.0	38.0	5.0
	R4	Western Property Line	339	38.3	35.0	3.3

[1] Calculated as attenuation by distance only, $L_2 = L_1 - 20\log\left(\frac{d_2}{d_1}\right)$
[2] As predicted by Cadna model

4.2 Measurement Equipment

Some or all of the following equipment was used at the site to measure existing noise levels:

- Larson Davis Model 824, Type 1 Sound Level Meter, Serial #824A0344
- Larson Davis Model CA250, Type 1 Calibrator, Serial #2520

The sound level meter was field-calibrated immediately prior to the noise measurement and checked afterwards, to ensure accuracy. All sound level measurements conducted and presented in this report, in accordance with the regulations, were made with sound level meters that conform to the American National Standards Institute specifications for sound level meters (ANSI SI.4-1983, R2001). All instruments are maintained with National Bureau of Standards traceable calibration, per the manufacturers' standards.

5.0 IMPACTS

Based on the project information available, it is our conclusion that, without mitigation, the unmanned operation of this facility will be in compliance with the County of San Diego nighttime property line noise limits. Calculations show that the HVAC equipment noise impacts from the proposed Nextel facility will be as high as 38.0 dBA L_{EQ} at the eastern property line, at the worst-case location. There are no "noise control elements" that ensure compliance with the County of San Diego nighttime property line noise limits. The proposed facility will not create any significant noise impacts to the existing residence on the subject property.

The calculated noise levels at each property line at the worst-case locations are summarized in Table 4. For details of the acoustical analysis, please refer to Appendix D: Cadna Analysis Data and Results. Please also refer to Figure 6: Site Plan Showing Noise Impacts to Project Vicinity and Property Line Receiver Locations.

Table 4. Calculated Wireless Facility Noise Impact Levels	
Receiver Location	Equipment Noise Level (dBA L_{EQ})
R1, Northern Property Line	14.0
R2, Southern Property Line	21.5
R3, Eastern Property Line	38.0
R4, Western Property Line	35.0

6.0 MITIGATION

Mitigation is not required for the proposed Nextel wireless telecommunications facility for compliance with the County of San Diego property line noise limits.

7.0 CONCLUSION

The proposed Nextel wireless telecommunications facility will be in compliance with all applicable County of San Diego property line noise limits.

This analysis is based upon a current worst case scenario of anticipated, typical equipment for this type of wireless facility. Substitution of equipment with higher noise emission levels may invalidate the recommendations of this study.

These conclusions and recommendations are based on the most up-to-date, project-related information available. However, noise characteristics of mechanical equipment may vary for specific installations. Verification of compliance with County of San Diego noise regulations can be provided, if desired, by conducting a noise survey consisting of sound level measurements at or close to the nearest impacted locations in each direction, after the project is built and in operation.

This is best accomplished in the late night or very early morning hours while the equipment is in full operation and other ambient noise sources are minimized. If any additional sound attenuation is found to be necessary, it can be specified at that time. We do not expect that any additional sound attenuation will be necessary within the scope of this project.

8.0 CERTIFICATION

This report is based on the related project information received and measured noise levels, and represents a true and factual analysis of the acoustical impact issues associated with the proposed Nextel wireless telecommunications facility, located 1654 Arnoldo Road, in Dulzura, County of San Diego, California. This report was prepared by Justin Smith, Michael Burrill, Charles Terry, and Douglas Eilar.

EILAR ASSOCIATES

Justin D. Smith, Senior Acoustical Consultant

Douglas K. Eilar, Principal

9.0 REFERENCES

1. Beranek, Leo L., *Acoustical Measurements*, Published for the Acoustical Society of America by the American Institute of Physics, Revised Edition, 1988.

2. San Diego County Code

3. Harris, Cyril M., *Handbook of Acoustical Measurements and Noise Control*, Acoustical Society of America, 3rd Edition, 1998.

4. Harris, Cyril M., Ph.D., *Noise Control in Buildings*, Original Edition, 1994.

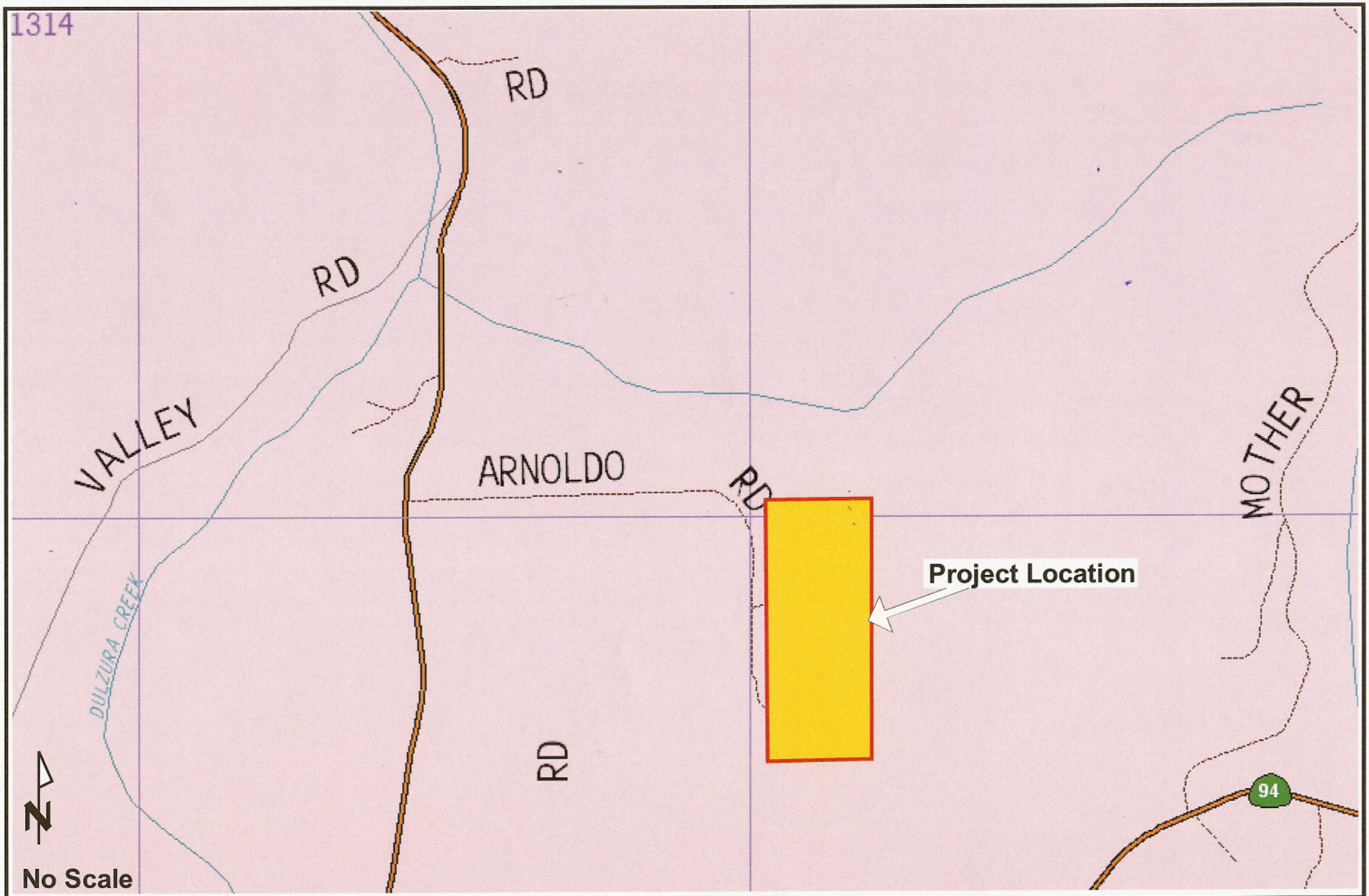
5. Hirschorn, Martin, *Noise Control Reference Handbook*, Revised Edition, 1989.

6 Ivine, Leland K. and Richards, Roy L., *Acoustics and Noise Control Handbook for Architects and Builders*, Original Edition, 1998.

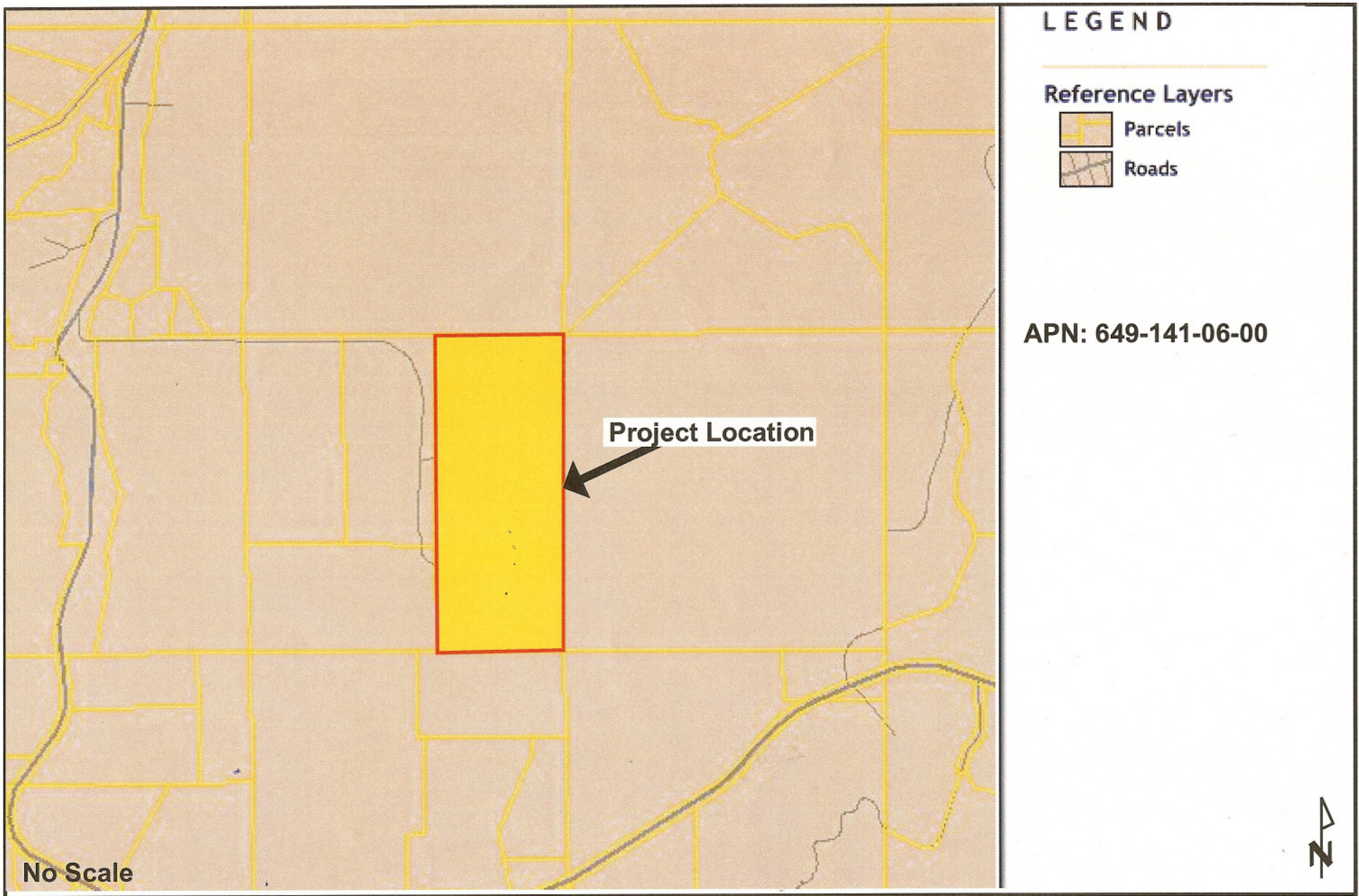
7 Knudsen, Vern O. and Harris, Cyril M., *Acoustical Designing In Architecture*, American Institute of Physics for the Acoustical Society of America, 2nd Edition, 1978.

8. Raichel, Daniel R., *The Science and Applications of Acoustics*, American Institute of Physics Press for the Acoustical Society of America, 1st Edition, 2000.

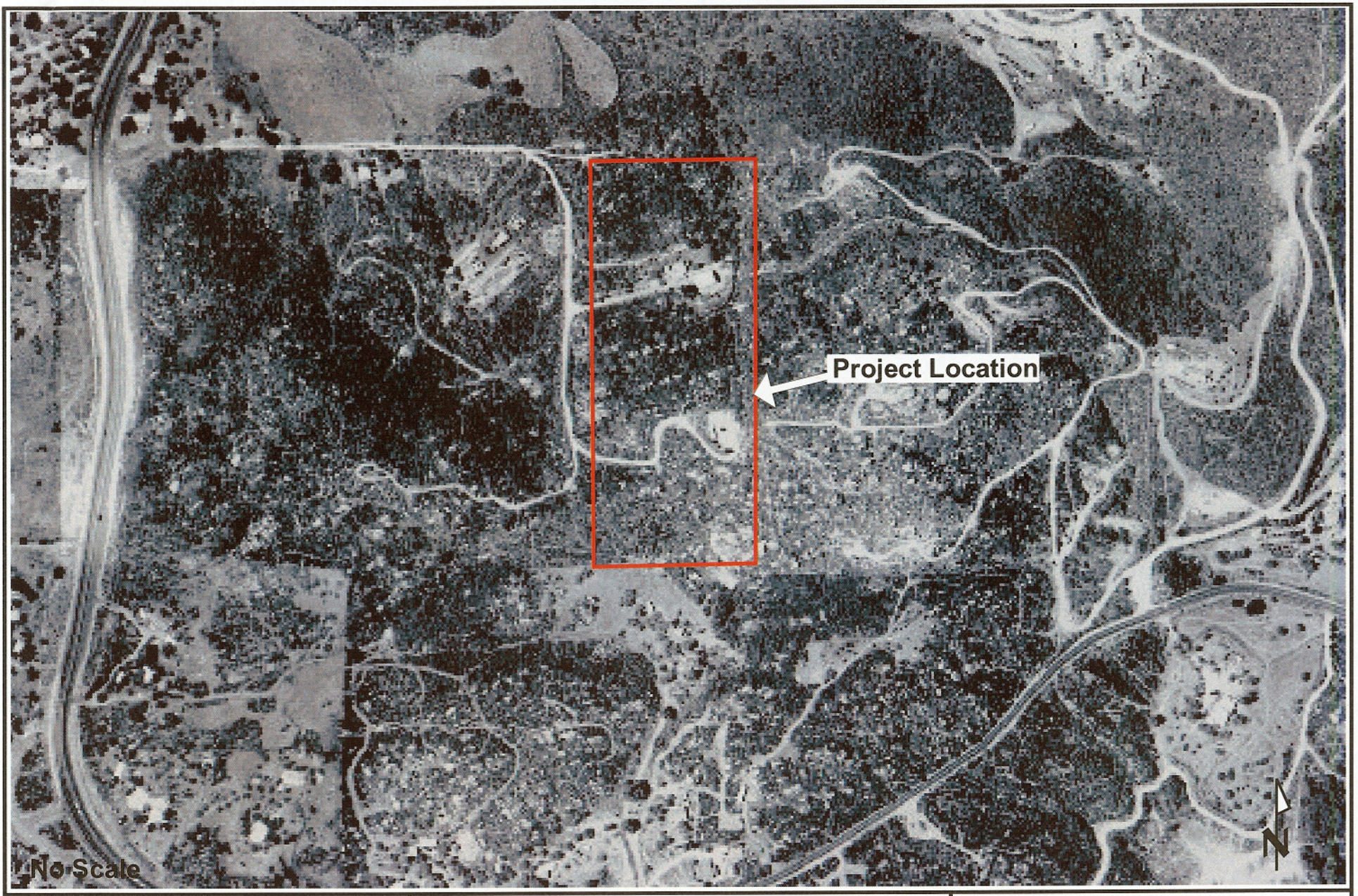
FIGURES



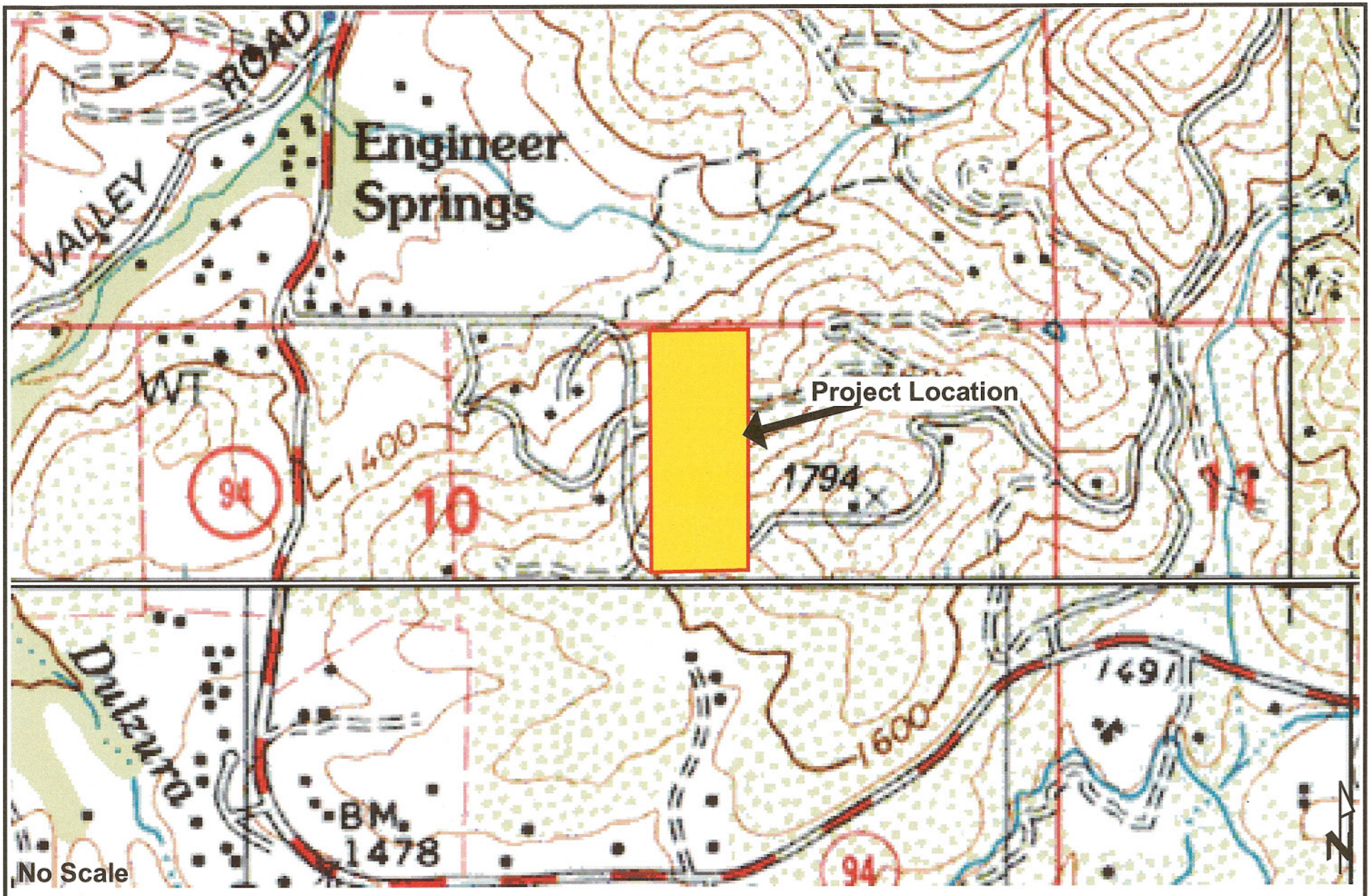
Eilar Associates 539 Encinitas Boulevard, Suite 206 Encinitas, California 92024 760-753-1865	Vicinity Map Job # A60527N1	Figure 1



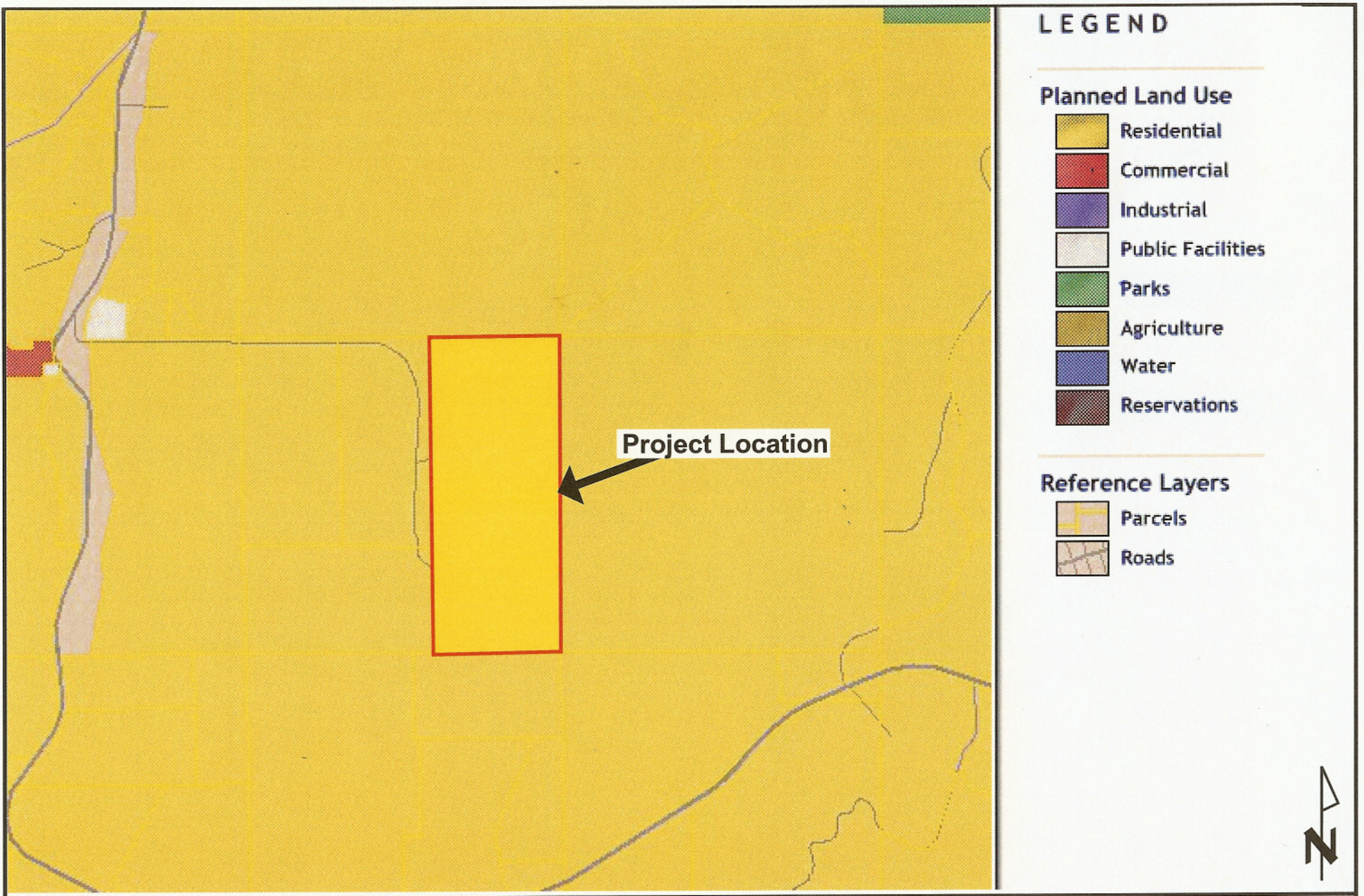
Eilar Associates 539 Encinitas Boulevard, Suite 206 Encinitas, California 92024 760-753-1865	Assessor's Parcel Map Job # A60527N1	Figure 2



Eilar Associates 539 Encinitas Boulevard, Suite 206 Encinitas, California 92024 760-753-1865	Satellite Aerial Photograph Job # A60527N1	Figure 3



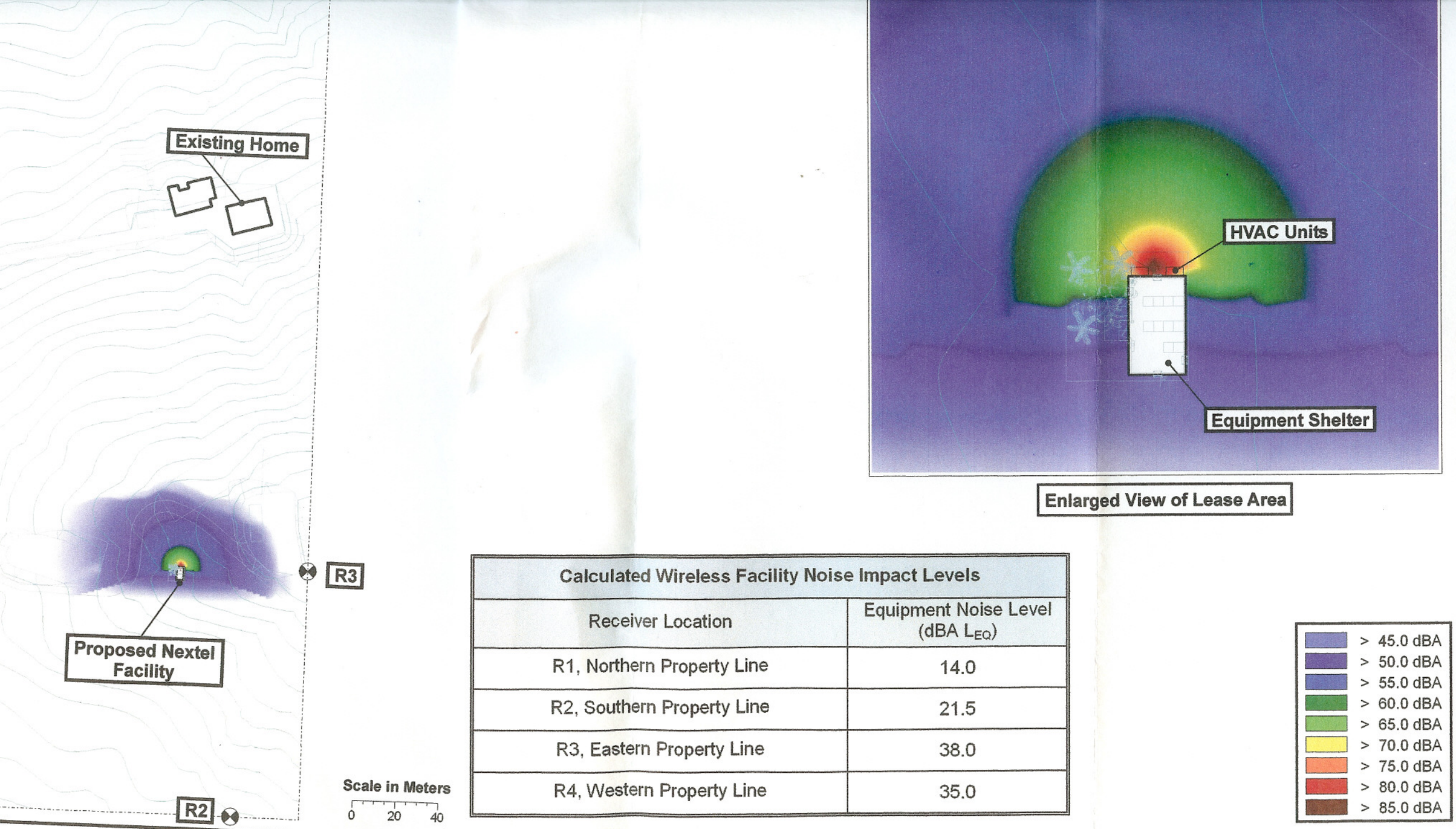
Eilar Associates 539 Encinitas Boulevard, Suite 206 Encinitas, California 92024 760-753-1865	Topographic Map Job # A60527N1	Figure 4



Eilar Associates
539 Encinitas Boulevard, Suite 206
Encinitas, California 92024
760-753-1865

Planned Land Use Map
Job # A608527N1

Figure 5



Enlarged View of Lease Area

Calculated Wireless Facility Noise Impact Levels	
Receiver Location	Equipment Noise Level (dBA L_{EQ})
R1, Northern Property Line	14.0
R2, Southern Property Line	21.5
R3, Eastern Property Line	38.0
R4, Western Property Line	35.0

Eilar Associates
539 Encinitas Boulevard, Suite 206
Encinitas, California 92024

Site Plan Showing Noise Impacts to Project

APPENDIX A

Site Plans for Nextel Wireless Telecommunications Facility

Mitchell J

NEXTEL COMMUNICATIONS, INC.

CA-8414J / ENGINEER SPRINGS

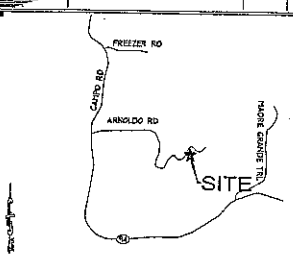
1654 ARNOLDO ROAD, DELZURA, CA 91917

DIRECTIONS TO SITE

FROM SAN DIEGO NEXTEL OFFICE, TAKE I-805 SOUTH TAKE THE CA-94 EAST EXIT, CONTINUE ON CA-94 TOWARDS CAMPO, CA-94 BECOMES CAMPO ROAD, TURN LEFT ON ARNOLDO ROAD. ARIVE AT 1654 ARNOLDO ROAD, DELZURA, CA 91917

DIRECTIONS TO SITE

VICINITY MAP



VICINITY MAP

CLIENT APPROVALS

RF INITIALS: _____ DATE

ZONING/PLANNING INITIALS: _____ DATE

ARCHITECT INITIALS: _____ DATE

CONSTRUCTION INITIALS: _____ DATE

SITE ACQUISITION INITIALS: _____ DATE

LANDLORD INITIALS: _____ DATE

CLIENT APPROVALS

ACCESSIBILITY DISCLAIMER

THIS PROJECT IS AN UNOCCUPIED WIRELESS TELECOMMUNICATIONS FACILITY AND, ACCORDING TO WRITTEN INTERPRETATION FROM THE CALIFORNIA DEPARTMENT OF THE STATE ARCHITECT, IS EXEMPT FROM DISABLED ACCESS REQUIREMENTS.

PROJECT STATEMENT

I HEREBY CERTIFY THAT THIS PROJECT COMPLIES WITH TITLE 24, PART 6 OF THE CALIFORNIA STATE CODE.

SIGNED

LICENSED ARCHITECT MITCHELL J. DAWSON No. C20335 REN. 2-31-07 STATE OF CALIFORNIA

TITLE 24 COMPLIANCE

APPLICABLE CODES

ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES INCLUDING BUT NOT LIMITED TO:

1. CALIFORNIA BUILDING CODE - 2001 (TITLE 24)
2. UNIFORM BUILDING CODE - 1997
3. UNIFORM MECHANICAL CODE - 2000
4. UNIFORM PLUMBING CODE - 2000
5. NATIONAL ELECTRICAL CODE - 1996
6. LIFE SAFETY CODE - N.F.P.A. 101 - 1985 & 1990
7. NATIONAL COUNCIL ON RADIATION PROTECTION AND MEASUREMENTS 934
8. RULES AND REGULATIONS OF PRIVATE AND PUBLIC UTILITIES
9. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
10. AMERICAN SOCIETY OF TESTING MATERIALS (ASTM)
11. FEDERAL SPECIFICATIONS (FED. SPEC.)
12. UNDERWRITERS LABORATORIES
13. NATIONAL FIREPROTECTION ASSOCIATION (NFPA) (AS ACCEPTED BY THE STATE AGENCIES)

APPLICABLE CODES

PROJECT SUMMARY

SITE NAME
ENGINEER SPRINGS

SITE NUMBER
CA-8414J

SITE ADDRESS
1654 ARNOLDO ROAD,
DELZURA, CA 91917

LANDLORD
SHIFT FAMILY TRUST
1654 ARNOLDO ROAD
DELZURA, CA 91917

LANDLORD CONTACT
JUDI & MIKE SHIFT
(619) 468-4144

APPLICANT
NEXTEL COMMUNICATIONS, INC.
5761 COPLEY DR., SUITE 100
SAN DIEGO, CA. 92111
(858) 650-4265 (858) 650-4202 FAX
ATTN: JIM KENNEDY

ASSESSOR'S PARCEL NUMBER:
648-141-06

CURRENT ZONING:
A72

SPRINKLERED BLDG:
NA

(E) OCCUPANCY:
NA

(N) OCCUPANCY:
U

(E) TYPE OF CONSTRUCTION:
V-N

(N) TYPE OF CONSTRUCTION:
V-N

PROJECT DESCRIPTION: MINOR USE PERMIT

NEXTEL PROPOSES TO CONSTRUCT, OPERATE AND MAINTAIN AN UNMANNED, WIRELESS COMMUNICATIONS FACILITY AT THIS SITE.

THE FACILITY WILL CONSIST OF APPROXIMATELY 150 LEASE AREA W/ 240 OF SQUARE FEET OF EQUIPMENT SHELTER, TWELVE DIRECTIONAL PANEL ANTENNAS WILL BE MOUNTED TO A 35 FT. HIGH FAUX MONOPALM, ANTENNAS PAINTED TO MATCH ARTIFICAL LEAVES. ELECTRICAL AND TELCO RUNS TO SITE.

OPERATING FREQUENCIES:
TRANSMIT: 851-869, 935-940, 1930-1945 MHZ
RECEIVE: 806-824, 896-901, 1850-1865 MHZ
ERP = 100 WATTS MAX.

LATITUDE: N
LONGITUDE: W

PROJECT SUMMARY

CONSULTANT TEAM

ARCHITECTS & ENGINEERS

MITCHELL J. ARCHITECTURE
4663 RONSON COURT, SUITE K
SAN DIEGO, CA 92111
TEL: (858) 650-3150
FAX: (858) 650-3140

CONTACT: MITCH CAMPAGNA (PROJECT MANAGER)

CONSULTANT TEAM

SHEET INDEX

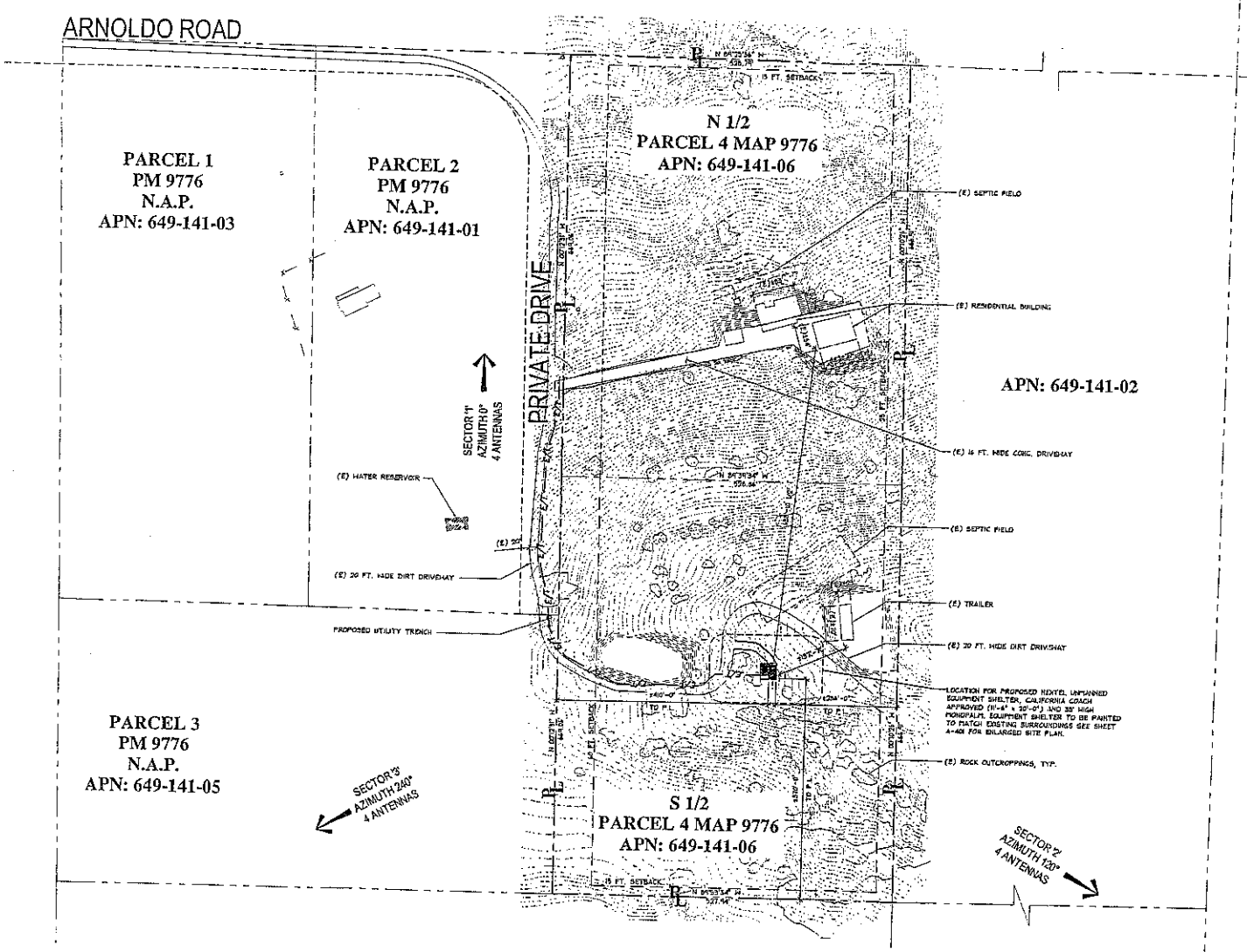
Sheet List Table	
Sheet Number	Sheet Title
G-001	TITLE SHEET-PROJECT INFORMATION & VICINITY MAP
A-101	SITE PLAN & NOTES
A-201	EXTERIOR ELEVATIONS
A-401	ENLARGED SITE PLAN
D-501	ANTENNA PLAN & SHELTER ELEVATIONS

SHEET INDEX

Title Sheet, Project Information & Vicinity Map

MCMXCVII

Plan Check No:



North

01 SITE PLAN
1" = 200'-0"

SITE PLAN & NOTES

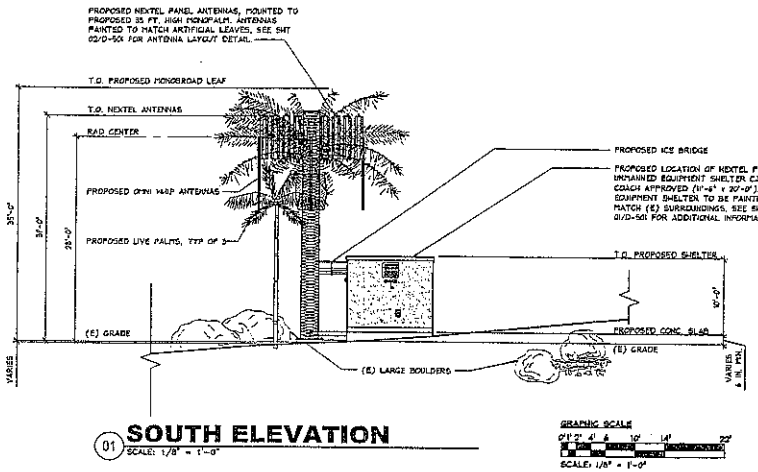
A

Plan Check No:

NOTE:

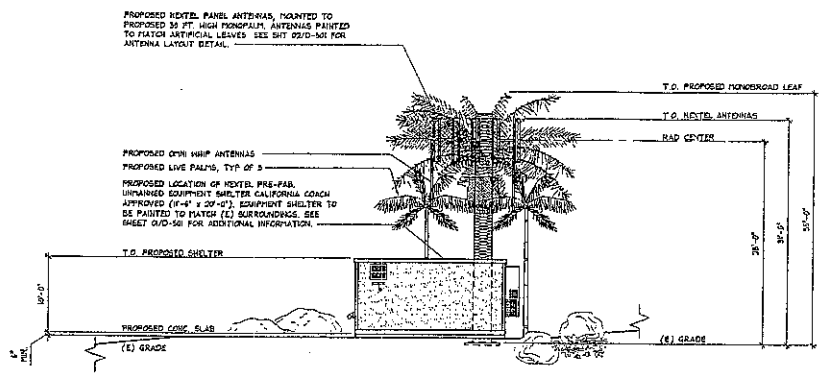
ANTENNAS, MOUNTING BRACKETS & ANY EXPOSED EQUIPMENT ON MONOPALM SHALL BE PAINTED TO MATCH THE ARTIFICIAL LEAVES

ANTENNA SCREENS WITH LEAVES SHALL BE PROVIDED FOR EACH ANTENNA TO PROVIDE ADDITIONAL SCREENING



01 **SOUTH ELEVATION**
SCALE: 1/8" = 1'-0"

GRAPHIC SCALE
0' 1' 2' 4' 8' 10' 14' 22'
SCALE: 1/8" = 1'-0"



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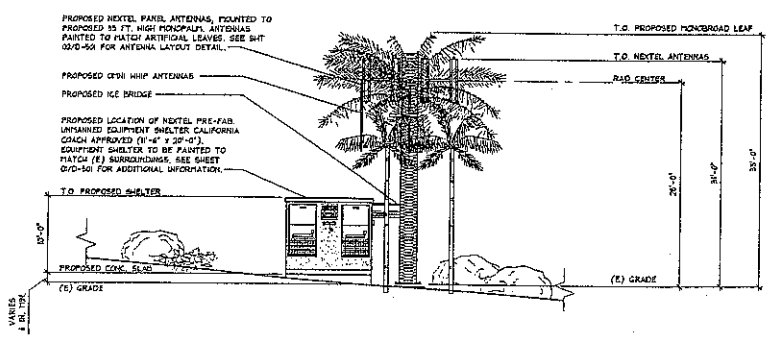

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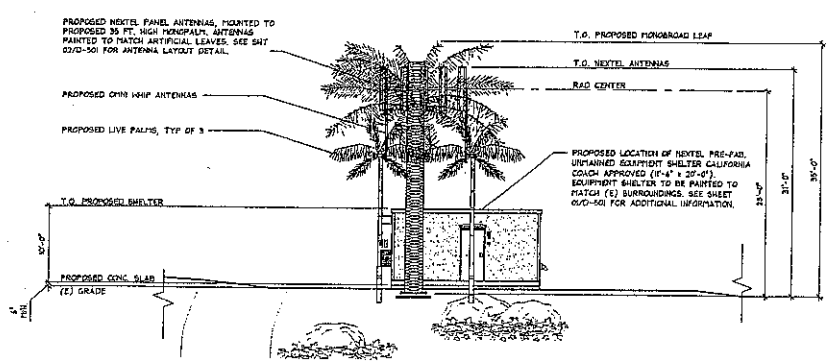
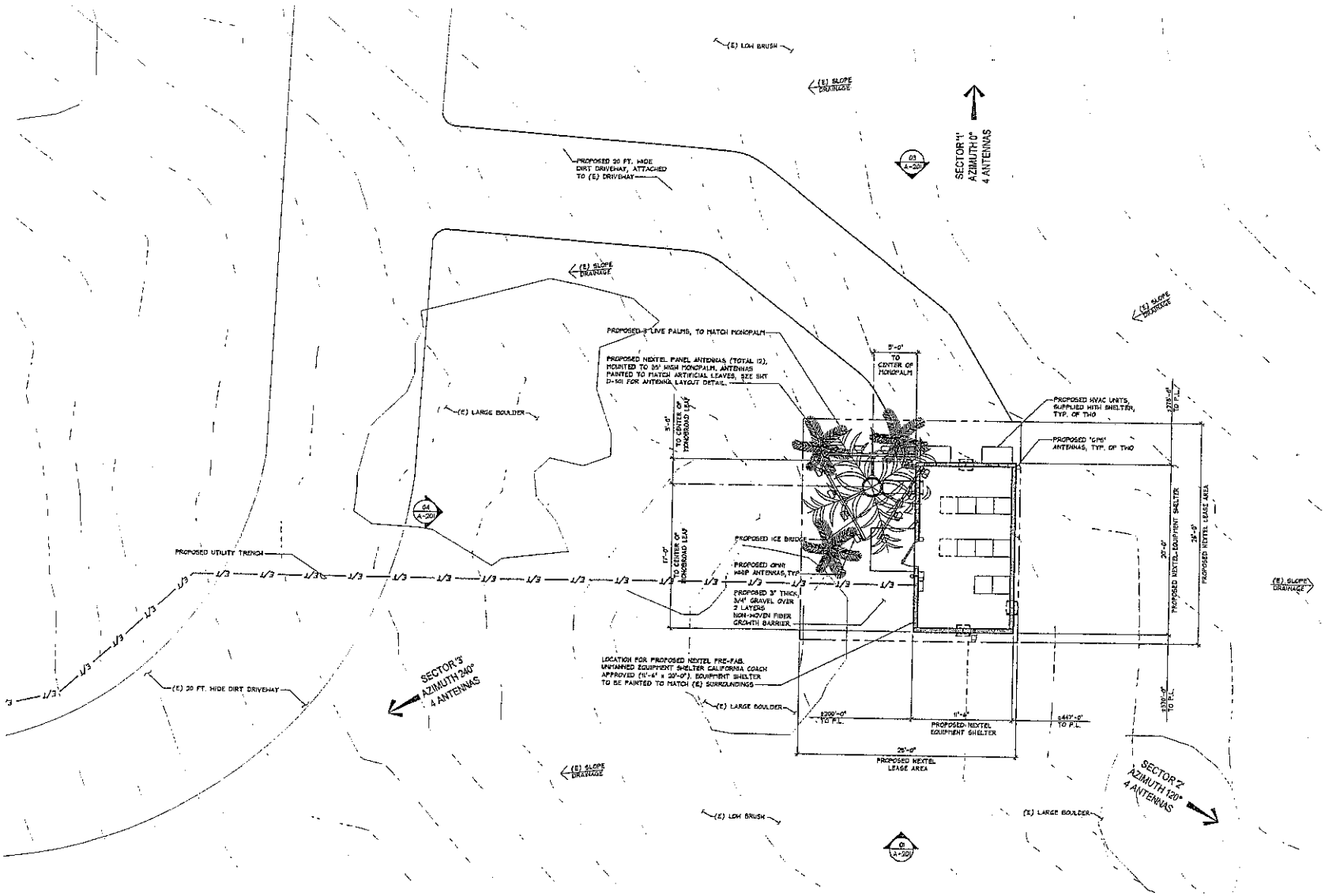


04 **WEST ELEVATION**
SCALE: 1/8" = 1'-0"

EXTERIOR ELEVATIONS

A

Plan Check No:



01 **ENLARGED SITE PLAN**
SCALE: 1/4" = 1'-0"

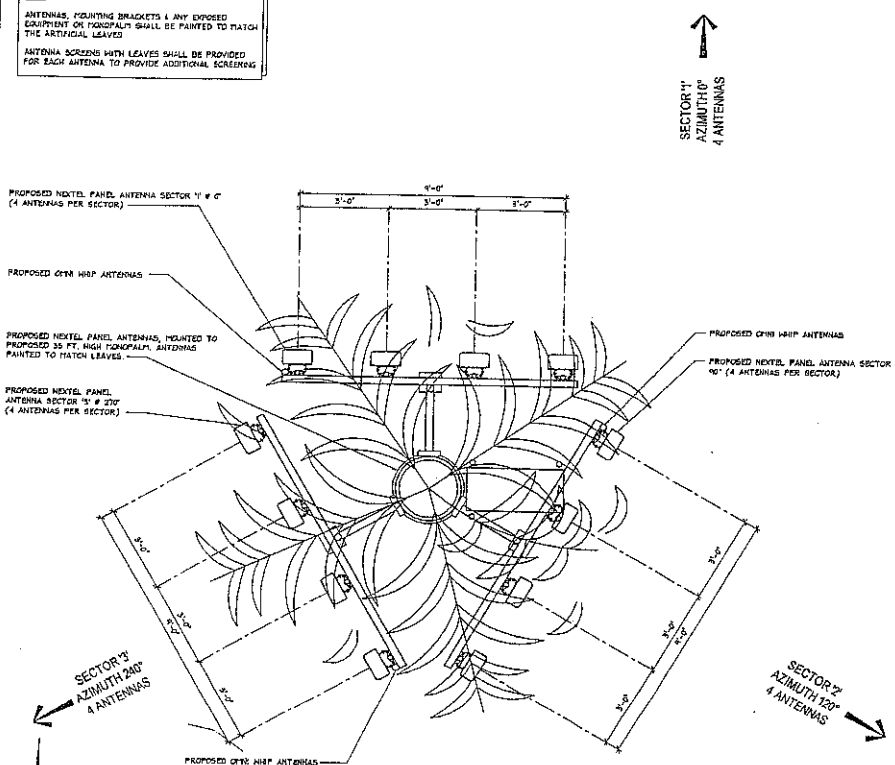
ENLARGED SITE PLAN

Plan Check No:

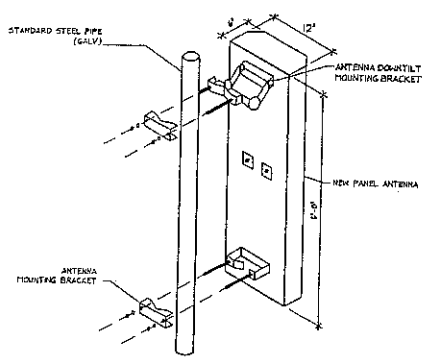
NOTE:

ANTENNAS, MOUNTING BRACKETS & ANY EXPOSED EQUIPMENT OR MONOPALM SHALL BE PAINTED TO MATCH THE ARTIFICIAL LEAVES

ANTENNA SCREENS WITH LEAVES SHALL BE PROVIDED FOR EACH ANTENNA TO PROVIDE ADDITIONAL SCREENING

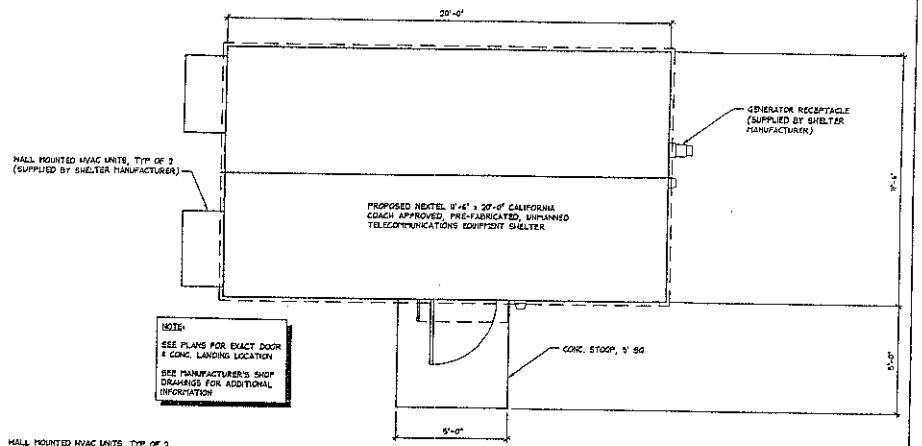


02 **ANTENNA LAYOUT PLAN**
1/4" = 1'-0"

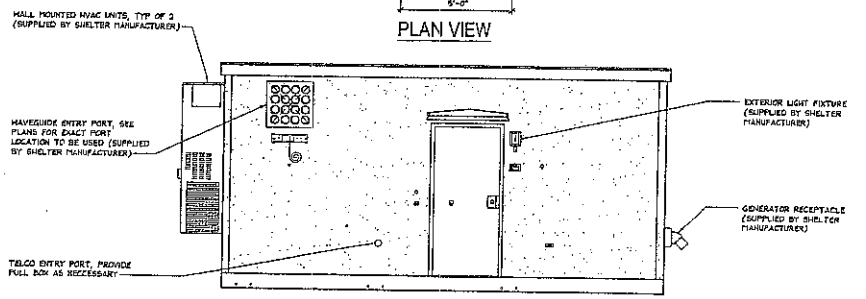


03 **ANTENNA ATTACHMENT**
1" = 1'-0"

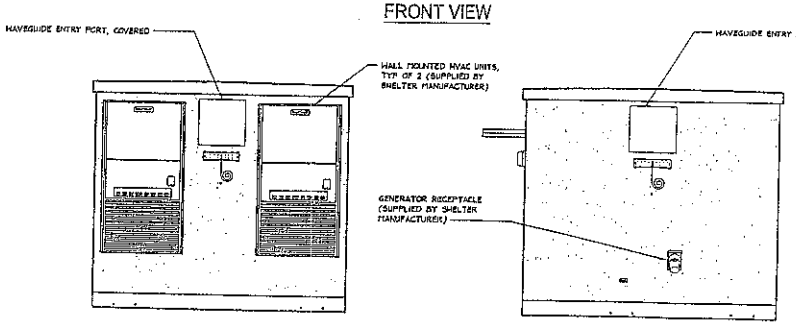
OPERATING FREQUENCIES:
TRANSMIT: 851-869, 935-940, 1930-1995 MHZ
RECEIVE: 806-824, 896-901, 1910-1915 MHZ
ERP = 100 WATTS MAX.



PLAN VIEW



FRONT VIEW



SIDE VIEWS

01 **EQUIPMENT SHELTER PLAN & ELEVATIONS**
3/8" = 1'-0"

EQUIPMENT SHELTER ELEVATIONS & ANTENNA PLAN

Plan Check No:

APPENDIX B

Pertinent Sections of the County of San Diego Scoping Letter, Dated March 29, 2006

ATTACHMENT C
Noise

Project Specific Information:
Preliminary acoustical estimates indicate that without site-specific noise mitigation measures, this project may generate noise levels that exceed the applicable limits of the County noise regulations. For this reason, staff requires a site-specific noise study by a County-certified acoustical consultant to evaluate any on-site exterior noise generators to be used on the project site such as air conditioners and to demonstrate they comply with the property line sound level limits of the County Noise Ordinance (Section 36.404). Please refer to the Ordinance discussion for additional details (See below).

Noise Ordinance:
A preliminary review of the project information provided by the AEIS indicates that there is insufficient information to determine whether permanent equipment and operations on-site will exceed sound level limits of the San Diego County Noise Ordinance (Section 36-404). The County Noise Ordinance does not permit noise levels that impact adjoining properties or exceed County Noise Standards. The project site as well as adjacent land uses are zoned **A72** which allows a one-hour average sound level of 50 decibels (dBA) from 7 a.m. to 10 p.m. and 45 decibels (dBA) from 10 p.m. to 7 a.m. In order for the Department to make a determination on the project's conformance with County noise standards, the applicant must demonstrate that the hourly average sound levels do not exceed either threshold at the property line, as the most stringent Ordinance condition for the project.

To determine conformance to the County Noise Ordinance, a noise study is required and it is essential that this component of this analysis include the following information:

(1). Manufacturers Spec Sheet for all noise producing equipment on-site that identifies the ARI standard and/or decibel (dBA) per range. It is important to note that all noise producing sources must be included.

(2). Additional plot plans that identifies the site location of all noise sources in relation to property lines. It is essential to address all potential noise sources on-site and to include a discussion related to openings within all surrounding walls or fences, such as driveways, fencing and gates.

(3). Hours of operation and activity level at each hour.

General information: A noise analysis is needed to determine whether or not noise levels exceed San Diego County standards. Noise analysis shall occur when the project is adjacent to heavily traveled roads, railroad tracks, airports, or heavy industrial operations. Noise analysis may also be required for a project that generate high levels of noise either through activities directly associated with the

proposal or major increases in traffic generated by the proposal (direct and cumulative impacts).

If the noise impacts are associated with traffic movements, airports, or other transportation activities, a noise analysis shall utilize field measurements and projected transportation noise levels to determine the potential for impacts to present and future residents of the project. The noise analysis must conform to the Noise Element of the San Diego County General Plan.

If the noise impacts are associated with activities on the site, such as rock crushing or some other proposed activity, the noise analysis shall include estimates of noise generation potential from the site utilizing measurements from similar activities that are already in existence. The noise analysis must conform to the San Diego County Noise Ordinance.

APPENDIX C

San Diego County Code, Section 36.404, Sound Level Limits

Section 36.404

SECTION 36.404 SOUND LEVEL LIMITS

Unless a variance has been applied for and granted pursuant to this chapter, it shall be unlawful for any person to cause or allow the creation of any noise to the extent that the one-hour average sound level, at any point on or beyond the boundaries of the property on which the sound is produced, exceeds the applicable limits set forth below except that construction noise level limits shall be governed by Section 36.410.

ZONE	TIME	APPLICABLE LIMIT ONE-HOUR AVERAGE SOUND LEVEL (DECIBELS)
R-S, R-D, R-R, R-MH, A-70, A-72, S-80, S-81, S-87, S-88, S-90, S-92, R-V, AND R-U. Use regulations with a density of less than 11 dwelling unit per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45
R-RO, R-C, R-M, C-30, S-86, R-V AND R-U Use regulations with a density of 11 or more dwelling units per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50
S-94 and all other commercial zones	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55
M-50, M-52, M-54	Anytime	70
S-82, M-58, and all other industrial zones	Anytime	75

If the measured ambient level exceeds the applicable limit noted above, the allowable one-hour average sound level shall be the ambient noise level. The ambient noise level shall be measured when the alleged noise violation source is not operating.

The sound level limit at a location on a boundary between two (2) zoning districts is the arithmetic mean of the respective limits for the two districts provided however, that the one-hour average sound level limit applicable to extractive industries including but not limited to borrow pits and mines, shall be 75 decibels at the property line regardless of the zone where the extractive industry is actually located.

Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of this section, measured at or beyond six (6) feet from the boundary of the easement upon which the equipment is located. (Amended by Ord. No. 7094 (N.S.) Effective 3-25-86.)

APPENDIX D

Cadna Analysis Data and Results

Noise Source Data

Name	M.	ID	Result. PWL		Lw / Li			Correction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Night	Type	Value	norm.	Day	Night		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)			dB(A)	dB(A)	dB(A)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Marvair ComPac II HVAC Uni			89.6	89.6	Lw	L1		0.0	0.0					0.0		(none)	1.22	r	101.22	114.00	510.27

Property Line Noise Levels

Name	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
			Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
Northern Property Line		R1	14.0	14.0	0.0	0.0		x	Total	1.52	r	101.22	406.84	437.42
Southern Property Line		R2	21.5	21.5	0.0	0.0		x	Total	1.52	r	128.94	-0.21	488.49
Eastern Property Line		R3	38.0	38.0	0.0	0.0		x	Total	1.52	r	160.57	114.00	519.24
Western Property Line		R4	35.0	35.0	0.0	0.0		x	Total	1.52	r	-0.41	114.00	492.22

Cadna/A-Berechnung
Version 3.5.115 (32 Bit)
Datei: C:\Documents and Settings\jsmith\Desktop\Engineer Springs\A60527N1 Nextel Engineer Springs ver 2 JDS.cna
Start: 23.06.06 15:49:04
Berechnungsparameter:

General	
Country	International
Max. Error (dB)	0
Max. Search Radius (m)	2000
Min. Dist Src to Rcvr	0
Partition	
Raster Factor	0.5
Max. Length of Section (m)	1000
Min. Length of Section (m)	1
Min. Length of Section (%)	0
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960
Reference Time Night (min)	480
Daytime Penalty (dB)	0
Recr. Time Penalty (dB)	6
Night-time Penalty (dB)	10
DTM	
Standard Height (m)	478.5
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src/Rcvr	100.00 100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.1
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°C)	20
rel. Humidity (%)	70
Ground Absorption G	1
Wind Speed for Dir.(m/s)	3
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (Schall 03)	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (AzB)	
Strictly acc. to AzB	

Receiver: Western Property Line
ID: R4
X: -0.41
Y: 114
Z: 492.22
Ground: 490.7

ISO

Bezeichnung	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
Marvair ComPac II HVAC Unit		101.2	114	510.27	509.05	0	-24.8	-24.8	1	103.2	2.34	32	51.28	0	-3.6	6.39	-0.6	0	0	0.	0	0	0	0	-78.87	-78.87
Marvair ComPac II HVAC Unit		101.2	114	510.27	509.05	0	68.3	68.3	1	103.2	2.34	63	51.28	0	-3.6	3.57	-0.6	0.01	0	0	0	0	0	0	17.04	17.04
Marvair ComPac II HVAC Unit		101.2	114	510.27	509.05	0	76	76	1	103.2	2.34	125	51.28	0	1.35	0	-0.6	0.04	0	0	0	0	0	0	23.37	23.37
Marvair ComPac II HVAC Unit		101.2	114	510.27	509.05	0	81.5	81.5	1	103.2	2.34	250	51.28	0	12.6	0	-0.6	0.12	0	0	0	0	0	0	17.53	17.53
Marvair ComPac II HVAC Unit		101.2	114	510.27	509.05	0	81.9	81.9	1	103.2	2.34	500	51.28	0	10.3	0	-0.6	0.29	0	0	0	0	0	0	20.03	20.03
Marvair ComPac II HVAC Unit		101.2	114	510.27	509.05	0	85.2	85.2	1	103.2	2.34	1000	51.28	0	1.68	0	-0.6	0.51	0	0	0	0	0	0	31.76	31.76
Marvair ComPac II HVAC Unit		101.2	114	510.27	509.05	0	82.6	82.6	1	103.2	2.34	2000	51.28	0	0	0	-0.6	0.93	0	0	0	0	0	0	30.42	30.42
Marvair ComPac II HVAC Unit		101.2	114	510.27	509.05	0	75.2	75.2	1	103.2	2.34	4000	51.28	0	0	0	-0.6	2.36	0	0	0	0	0	0	21.59	21.59
Marvair ComPac II HVAC Unit		101.2	114	510.27	509.05	0	68.7	68.7	1	103.2	2.34	8000	51.28	0	0	0	-0.6	7.91	0	0	0	0	0	0	9.54	9.54

Limit. Value D/N: 0 0
Level D/N: 35.0234 35.0234

Berechnung, Endı 23.06.06 15:49:05 (1 s)